

Testimony of Elizabeth Lowery
Before the House Energy and Air Quality Subcommittee
Regarding GM Advanced Technology Vehicle Plans

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Good afternoon. My name is Elizabeth Lowery and I am Vice President for Environment and Energy in the GM Public Policy Center. I am pleased to be able to speak to you today regarding GM's near and longer term plans for development and implementation of advanced technologies into our future vehicles.

GM has always been a leader in the development and use of technologies in vehicles. From the move away from hand-cranked starters -- to the highly successful catalytic control technology for vehicle emissions -- to efforts to produce an innovative electric vehicle in the 1990s, GM has been instrumental in the implementation of advanced technologies.

Today, we are continuing to focus on ways to advance vehicle fuel economy, safety and emissions. And GM is leading in all of these activities. We have a plan to address both the needs of our customers and the critical public policy issues facing us. This plan includes near term steps, such as continuing to make improvements to today's internal combustion engines and transmissions and increased E85 flexfuel capability; mid-term steps, such as more affordable and flexible hybridization of vehicles; and long-term steps, such as fuel cells powered by hydrogen. The answer to today's energy issues is not simple, and we believe that all of these technologies will play an important role in America's energy future.

Today, I am here to speak about our work in two particular areas -- E85 capable vehicles and hydrogen fuel cells.

GM is leading the effort on flexfueled vehicles capable of running on gasoline or E85 ethanol. These vehicles offer a choice to consumers -- a choice that has significant energy and economic benefits. Ethanol is renewable and, in high concentration blends, helps reduce greenhouse gas emissions; as E85 it helps reduce U.S. dependence on petroleum, diversifies our sources of transportation fuel, and reduces smog-forming emissions.

Ethanol usage provides great opportunities for the domestic agriculture industry and should help spur new job growth in other areas.

Until last fall there was limited interest in the development of ethanol as an alternative fuel. But when gasoline prices spiked in the aftermath of the hurricanes that devastated the Gulf Coast, ethanol became more visible and GM recognized an opportunity to become part of the solution. Earlier this year, General Motors launched a national advertising campaign, beginning with the very visible 2006 Super Bowl, hosted in our own home city of Detroit. After the Super Bowl, we continued through the 2006 Winter Olympics, including launching our "Live Green, Go Yellow" website. Traffic to that website quickly rose to the millions -- as consumers wanted to know more about E85, GM flexfuel vehicles and station locations.

But that was just the beginning. With nearly two million E85 capable vehicles already on the road and a plan to offer 14 separate E85 capable models in 2007, we wanted to make sure our customers knew when they were getting this flexfuel capability. So, GM launched a labeling effort that included an external badge on the vehicle noting its flexfuel capability and a yellow gas cap to remind customers that their vehicle is capable of running on E85.

We have also embarked upon several significant partnerships to increase the availability of the ethanol fueling infrastructure. Most recently, GM partnered with Meijer, CleanFuelUSA, the State of Michigan and the State of Indiana to work toward approximately forty new retail outlets. We have previously announced similar partnerships in California, Illinois, Minnesota and Texas -- working with a variety of energy companies, state agencies, and distribution outlets.

For the U.S., the growth of the ethanol industry raises enormous potential for displacing gasoline consumption in the transportation sector. If all of the 5 million flexfueled vehicles on the road today were fueled using E85, the U.S. could offset the need for 3.6 billion gallons of gasoline annually. And for the individual

consumer, regularly filling a 2007 Chevrolet Tahoe with E85 would displace the use of over 600 gallons of gasoline each year. These are impressive numbers, so we need to find ways to increase availability of E85 in the marketplace.

Looking to the long-term, General Motors has placed very high priority on fuel cells and hydrogen as the power source and energy carrier for automobiles. To accomplish this, GM's fuel cell program is focused on lowering cost and increasing reliability of the fuel cell stacks, demonstrating the promise of the technology through validation programs and collaborating with other parties on the infrastructure issues that need to be addressed. We have made significant progress in several of these areas:

- In the last six years, we have improved fuel cell power density by a factor of seven, while enhancing the efficiency and reducing the size of our fuel cell stack.
- We have significantly increased fuel cell durability, reliability, and cold start capability.
- We have developed safe hydrogen storage systems that approach the range of today's vehicles.
- We have made significant progress on cost reduction through technology improvements and system simplification.

With respect to collaboration, we are working with key partners on virtually every aspect of fuel cell and infrastructure technology. The FreedomCAR and Fuel Partnership, managed through the U.S. Department of Energy, has proven to be an important forum for addressing these issues and challenges.

Clearly huge challenges remain. Reliability of the fuel cell stacks and storage of the hydrogen on board the vehicle must be resolved to draw American consumers to these vehicles. And the fueling infrastructure must be available so that owners of these vehicles have no concerns about where to get the hydrogen.

In conclusion, there is no one single solution to the challenges we face. We are concentrating our energies on a number of different fronts, and believe that many of these technologies will coexist in the marketplace. General Motors has a rational advanced technology plan that goes from near term, focused on alternative fuels like E85 ethanol, to the long term hydrogen-powered fuel cells. We are executing that plan. All of these will help to simultaneously reduce U.S. energy dependence, remove the automobile from the environmental debate, and stimulate economic and jobs growth.